

Non-Verbal Autism Explained by Conflict Caused by Use of Motor Cortex to Process Auditory Information

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Introduction

Although it is important to understand this dynamic in the context of the publication of 28 May 2023 (*ibid.*,) that paper does not address the separate phenomenon of elective mutism in autism. This paper will provide a hypothesis on that sub-topic, specifically.

Abstract

The neuronal firing-time delays caused by the reduced or zero-salinity neuronal environment described in the paper of 28 May 2023 may affect the auditory cortex to a greater degree than other parts of the brain, particularly given the need for different parts of the brain to be able to communicate with one another as the brain grows. Long periods of absent interconnectivity or poor connectivity between brain regions with its etiology in the auditory cortices may be causing the brain, as a whole, to begin to rely upon a different part of the brain with knowledge of how words should sound: The Motor Cortex, to process auditory information.

I propose that if the auditory cortex loses the ability to relay information to the overall brain due to these slowed and/or inconsistent firing times, the Motor Cortex assumes some of the responsibility for interpreting auditory information. Because that part of the brain is also responsible for speech, this creates a conflict in which a person with autism-associated elective mutism becomes effectively deaf. They also become effectively (at the neurological level) deafened by the actuation of the arms, although patients with this condition cannot express their own observation of this effect due to their mutism, potentially explaining why it has not been discovered.

The autistic patient with elective mutism decides; consciously or unconsciously; that either they are “not good at” talking or that talking and listening are mutually exclusive and that the ability to hear must be prioritized over the desire to express one’s self. As has been observed, autistic children will often use other means as a primary method of getting attention, even in cases in which they are not mute. Moaning or grunting may be employed, most likely because this activity is not as taxing to the Motor Cortex (i.e. it does not require fine articulation of the tongue or movement of the jaw.) This preference for non-verbal methods of getting attention is almost superstitious in nature, but may be rooted in an unconscious understanding that engaging in verbal speech dampens neurological function and diminishes situational awareness in a manner which is unsettling to the autistic patient. Intriguingly, if this is true for someone with elective mutism, it may be true to some lesser extent for humans, generally and give us reason to more closely scrutinize the distracting effects of verbal speech on the learning process. Even pre-

vocalization i.e. “thinking about talking without actually doing it,” could impair cognition to an extent currently not recognized.

Conclusion

For most humans, engaging in verbal speech does not significantly limit situational awareness and most people are comfortable with “walking and chewing gum at the same time,” to use an aphorism. The patient with autism, because of his or her reliance upon the Motor Cortex for comprehensive sensory awareness particularly in the auditory domain, experiences anxiety when the Motor Cortex is used to support ordinary speech tasks as a result of the reduced situational awareness accompanied by its use. This is attributable to the inappropriate assignment of the Motor Cortex to auditory processing in some patients with autism which, in turn, has its roots in delayed neuronal firing times in the neurons of the auditory cortices.